UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R048XA002NM

Site Name: Mountain Grassland

Precipitation or Climate Zone: 15 to 30 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site is found on the north and northeast-facing slopes at lower elevations and can be found on all exposures at the higher elevations. The site is located on open benchlands, outwash fans or exposed ridges between parks and valleys and higher mountain slopes. High mountain rims and mountain valleys are included in this site. The Mountain Grassland often occurs on benches or depressed areas within the steeper surrounding slopes of the ponderosa pine. The slopes range from 0 to 25 percent or more with an average of 9 to 15 percent. Elevation ranges from 7,500 to 9,500 feet above sea level.

Land Form:

1. Ridge
2. Mountainside
3.

Aspect:

1. N/A
2.
3.

	Minimum	Maximum
Elevation (feet)	7,500	9,500
Slope (percent)	0	>25
Water Table Depth (inches)	33	>72

Flooding:	**Minimum**	**Maximum**
Frequency	Rare	Occasional
Duration	Brief	Long

Ponding:	**Minimum**	**Maximum**
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Medium to very high.

CLIMATIC FEATURES

Narrative:

Annual precipitation varies from 17 to 25 inches for this site and of this amount approximately 30 percent occurs in the form of winter snows. Variation in both winter and summer precipitation may be quite extreme, ranging from rather open dry winters to winters during which several feet of snow are accumulated. Summer thunderstorm activity is greater during July and August. Although more dependable than the sites at lower elevations, it may be very sporadic.

The air temperature varies from well below zero to about 70 degrees F. and the frost-free period lasts for 3 to 4 months depending upon elevation. Dates of the last killing frost may range from June 1st to June 15th and the first killing frost from September 15th to October 1st.

The freeze-free period ranges from 90 to 120 days. Some cool-season species begin their growth almost with the snow recession and also enjoy a brief growing period in the fall. Evaporation rates vary with elevations within the site. Rates are generally lower at higher elevations and increase at lower elevations, particularly on the southern and western exposures. Forage production is dependent upon both winter and summer moisture and therefore, yields of forage fluctuate directly with amount of precipitation. This site is a critical one also from the standpoint of watershed problems. It constitutes one of the storage facilities for winter moisture that will later be converted to stream flow for domestic and irrigation use.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	103	144
Freeze-free period (days):	127	169
Mean annual precipitation (inches):	15	30

Monthly moisture (inches) and temperature (^{0}F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.32	.88	14.2	46.8
February	.33	1.13	16.7	50.0
March	.62	1.79	20.4	55.7
April	.81	1.71	25.6	63.6
May	1.12	2.00	33.3	72.7
June	1.26	2.27	40.6	82.4
July	2.68	4.24	44.9	84.9
August	2.87	4.48	44.0	81.8
September	1.63	1.92	38.1	76.8
October	1.05	1.64	29.2	67.7
November	.56	1.15	20.3	55.6
December	.41	1.06	14.5	48.7

Climate Stations:

				Period	
Station ID 291813	Location Cimarron 4SW, NM	From: 5/1/1904	To: 12/31/01
Station ID 293488	Location Gascon, NM	From: 11/18/53	To: 12/31/01
Station ID 296275	Location Ocate 1N, NM	From: 08/01/60	To: 12/31/01
Station ID 296676	Location Pecos Ranger Station, NM	From: 01/01/16	To: 12/31/01

INFLUENCING WATER FEATURES

Narrative:

This site is not influenced by water from a wetland or stream.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

These soils are well drained, deep to moderately deep. The surface layer is medium to moderately fine textured. Gravel or stones are often present on the soil surface and throughout the profile. These soils have a moderate permeability, and the runoff is moderate. Available water-holding capacity is moderate to high. Effective rooting depth is 20 inches to more than 60 inches.

Parent Material Kind: Colluvium

Parent Material Origin: Mixed

Surface Texture:

1. Loam
2. Silty loam
3. Stony silty loam 4. Sandy loam 5. Gravelly loam 6. Silty clay loam 7. Very cobbly sandy loam 8. Sandy clay loam 9. Clay loam

Surface Texture Modifier:

1. Gravel
2. Cobble
3. Stone

Subsurface Texture Group: Loamy
Surface Fragments <=3" (% Cover): 15 to 35
Surface Fragments >3" (% Cover): 35 to 60

Subsurface Fragments <=3" (%Volume): 35 to 60
Subsurface Fragments >=3" (%Volume): 35 to 60

	Minimum	**Maximum**
Drainage Class:	Somewhat poorly	Excessively
Permeability Class:	Impermeable	Moderately rapid
Depth (inches):	40	>72
Electrical Conductivity (mmhos/cm):	0.00	2.00
Sodium Absorption Ratio:	0.00	5.00
Soil Reaction (1:1 Water):	5.6	8.4
Soil Reaction (0.1M CaCl2):	N/A	N/A
Available Water Capacity (inches):	6	12
Calcium Carbonate Equivalent (percent):	N/A	N/A

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label**: HCPC

Plant Community Narrative: Historic Climax Plant Community
This site is a grassland dominated by cool-season bunch grasses. Grasses make up approximately 75 percent of the composition of the plant community. A variety of forbs are conspicuous when in bloom and make up approximately 15 percent of the annual yield. Small amounts of shrubs are widely scattered throughout the site and along the fringes bordering the woodland sites. Tree species usually associated with this site and often seen scattered throughout the site are ponderosa pine and Douglas fir. The overstory canopy is less than 5 percent.

Canopy Cover:	
Trees	5 %
Shrubs and half shrubs	5 %
Ground Cover (Aveage Percent of Surface Area).	
Grasses & Forbs	35
Bare ground	25
Surface gravel	0
Surface cobble and stone	5
Litter (percent)	30
Litter (average depth in cm.)	5

Plant Community Annual Production (by plant type):

Annual Production (lbs/ac)

Plant Type	Low	RV	High
Grass/Grasslike	450	975	1,350
Forb	90	195	270
Tree/Shrub/Vine	60	130	180
Lichen			
Moss			
Microbiotic Crusts			
Total	600	1,300	1,800

Plant Community Composition and Group Annual Production:

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	FEAR	Arizona Fescue	156 – 195	156 – 195
2	MUMO	Mountain Muhly	156 – 195	156 – 195
3	KOMA	Prairie Junegrass	104 – 130	104 – 130
4	AVSA	Oatgrass spp.	104 – 130	104 – 130
5	ACHNA	Needlegrass spp.	104 – 130	104 – 130
6	BOCU SCSC	Sideoats Grama Little Bluestem	104 – 130	104 – 130
7	PASM	Western Wheatgrass	39 – 65	39 – 65
8	BOGR2	Blue Grama	39 – 65	39 – 65
9	BLTR	Pine Dropseed	39 – 65	39 – 65
10	ANGE	Big Bluestem	39 – 65	39 – 65
11	BRMA4	Mountain Brome	39 – 65	39 – 65
12	CAREX	Sedge spp.	39 – 65	39 – 65
13	2GRAM	Other Grasses	39 – 65	39 – 65

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
14	ACMI2	Western Yarrow	39 – 65	39 – 65
15	IRIS LUPIN	Iris spp. Lupine spp.	39 – 65	39 – 65
16	PENST ERIOG	Penstemon spp. Buckwheat spp.	39 – 65	39 – 65
17	2FORB	Other Forbs	39 – 65	39 – 65

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
18	QUERC	Oak spp.	39 – 65	39 – 65
19	SYAL CEMOP	Snowberry Hairy Mountainmahogany	39 – 65	39 – 65
20	RIBES ERICA ARGL9 ARTEM 2SD	Currant spp. Rabbitbrush spp. Cudweed Sagewort Sagebrush spp. Other Shrubs	39 – 65	39 – 65
21	PIPO PIED	Ponderosa Pine Pinyon Pine	Trace	Trace

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Other species that could appear include: bottlebrush squirreltail, wolftail, muttongrass, sheep fescue, vetch, skunkbush sumac and gooseberry.

Plant Growth Curves

Growth Curve ID **3102NM**

Growth Curve Name: **HCPC**

Growth Curve Description: **Cool-season bunch grass grassland with minor components of forbs and shrubs.**

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	10	10	25	30	12	5	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This site provides habitats, which support a resident animal community that is characterized by elk, northern pocket gopher, least chipmunk, western bluebird and bullsnake. There is seasonal use by mule deer and blue grouse.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations	
Soil Series	**Hydrologic Group**
Barela	C
Bernal Variant	B
Breece Variant	B
Brycan	B, C
Cajete	B
Croftshaw	B
Encicado	C
Ess	B
Hesperus	B
Hogg	C
Holman	A
Kinesava	B
Mara	B
Moreno	C
Morval	B
Roques	D
Tranquilar	C
Vamer	B
Yankee	D, C

Recreational Uses:

This site offers recreation potential for hiking, horseback riding, nature observation, photography of large game animals, small animals and wildflowers, hunting for elk, deer and turkey. At higher elevations during some years, this site can be used for winter sports. The natural beauty of the site is enhanced by the variety of forbs that become conspicuous when in bloom from July through August.

Wood Products:

Some ponderosa pine and Douglas fir can be cut from the widely scattered trees located throughout the site. Some Christmas trees can be cut in the fringe areas along the adjacent woodland sites.

Other Products:

Grazing:

Approximately 85 percent of the annual yield are from species that furnish forage for grazing animals. This site is suitable for grazing during the late spring, summer and early fall. The length of the grazing season varies with elevation. At lower elevations, the grazing season can be extended from May 1st to October 15th. At higher elevations, the grazing season is normally from June 1st to September 15th. The site can be used by all classes of livestock however; it is better suited for steers or sheep due to the short grazing season. To reduce spot grazing and overgrazing of the flatter slopes, herding of livestock is needed, especially when grazing sheep. Continuous grazing during the entire season will cause the more desirable species, such as Arizona fescue, mountain muhly, prairie junegrass and oatgrass to decrease. Species most likely to invade this site or increase form trace amounts are Kentucky bluegrass, sleepygrass and low-vigor blue grama. Other plants of generally low grazing value, such as ring muhly, threeawns, fringed sagewort, cudweed sagewort, pingue and rabbitbrush will increase. To maintain or improve the healthy well-balanced plant community, grazing needs to be delayed until the soils are firm after winter snows and when plants have had an opportunity to make good growth. Rapid growth of plants in the spring may temporarily deplete food reserves. Delaying grazing until the plants have had an opportunity to restore these food supplies is advisable. A system of deferred grazing, which varies the time of grazing and rest in a pasture during successive years, is needed to maximize forage production and to maintain a healthy well-balanced plant community. Grazing pressure from domestic livestock needs to be reduced during the spring and fall to reduce the competition that the livestock will have with the elk in competing for forage during this period of time.

Other Information:	
Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month	
Similarity Index	**Ac/AUM**
100 - 76	2.7 – 4.8
75 – 51	3.4 – 5.6
50 – 26	4.3 – 10.7
25 – 0	10.7+

Plant Part	Code	Species Preference	Code
Stems	**S**	**None Selected**	**NS**
Leaves	**L**	**Preferred**	**P**
Flowers	**F**	**Desirable**	**D**
Fruits/Seeds	**F/S**	**Undesirable**	**U**
Entire Plant	**EP**	**Not Consumed**	**NC**
Underground Parts	**UP**	**Emergency**	**E**
		Toxic	**T**

Plant Preference by Animal Kind:

Animal Kind: Livestock
Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Mountain Brome	Bromus marginatus	EP	D	D	P	P	P	P	P	P	P	P	P	D
Arizona Fescue	Festuca arizonica	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Prairie Junegrass	Koeleria macrantha	EP	D	D	D	D	D	D	D	D	D	D	D	D
Pine Dropseed	Blepharoneuron tricholepis	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Oatgrass	Avena sativi	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Big Bluestem	Andropogon gerardii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Needleandthread	Hesperostipa comata	EP	D	D	P	P	P	D	D	D	D	D	D	D
Hairy Mountainmahogany	Cercocarpus montanus	L/S	U	U	U	D	D	D	U	U	U	U	U	U
Penstemon	Penstemon spp.	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Sedge	Carex spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D

Animal Kind: Livestock
Animal Type: Horse

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Mountain Brome	Bromus marginatus	EP	D	D	P	P	P	P	P	P	P	P	P	D
Arizona Fescue	Festuca arizonica	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Prairie Junegrass	Koeleria macrantha	EP	D	D	D	D	D	D	D	D	D	D	D	D
Pine Dropseed	Blepharoneuron tricholepis	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Oatgrass	Avena sativi	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Big Bluestem	Andropogon gerardii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Needleandthread	Hesperostipa comata	EP	D	D	P	P	P	D	D	D	D	D	D	D
Hairy Mountainmahogany	Cercocarpus montanus	L/S	U	U	U	D	D	D	U	U	U	U	U	U
Penstemon	Penstemon spp.	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Sedge	Carex spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D

Animal Kind: Livestock
Animal Type: Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Mountain Brome	Bromus marginatus	EP	D	D	P	P	P	D	D	D	D	D	D	D
Arizona Fescue	Festuca arizonica	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Prairie Junegrass	Koeleria macrantha	EP	U	U	D	D	D	U	U	U	U	U	U	U
Pine Dropseed	Blepharoneuron tricholepis	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Western Wheatgrass	Pascopyrum smithii	EP	U	U	D	D	D	D	D	D	D	D	D	U
Oatgrass	Avena sativi	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Sedge	Carex spp.	EP	U	U	D	D	D	U	U	U	U	U	U	U

Animal Kind: Wildlife
Animal Type: Elk

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Mountain Brome	Bromus marginatus	EP	D	D	P	P	P	P	P	P	P	P	P	D
Arizona Fescue	Festuca arizonica	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Prairie Junegrass	Koeleria macrantha	EP	D	D	D	D	D	D	D	D	D	D	D	D
Pine Dropseed	Blepharoneuron tricholepis	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Oatgrass	Avena sativi	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Big Bluestem	Andropogon gerardii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Needleandthread	Hesperostipa comata	EP	D	D	P	P	P	D	D	D	D	D	D	D
Hairy Mountainmahogany	Cercocarpus montanus	L/S	U	U	U	D	D	D	U	U	U	U	U	U
Penstemon	Penstemon spp.	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Sedge	Carex spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D

Animal Kind: Wildlife

Animal Type: Deer

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Sagebrush	Artemisia spp.	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Hairy Mountainmahogany	Cercocarpus montanus	L/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Penstemon	Penstemon spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Oak	Quercus spp.	L/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites: _____

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: **New Mexico**

County: **Colfax, Mora, Rio Arriba, Sandoval, San Miguel, Santa Fe, Taos**

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? **Yes** ☐ **No** ☐

General Legal Description: _____

Relationship to Other Established Classifications:

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Rocky Mountains 48 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Colfax, Taos, Mora, San Miguel, and Santa Fe.

Characteristic Soils Are:	
Barela, Bernal Variant, Breece Variant, Brycan	Cajete, Croftshaw, Dalcan, Des Moines, Encicado
Ess, Hesperus, Hillery, Hogg, Holman, Kinesava	Mara, Moreno, Morval, Roques, Tranquilar
Vamer, Yankee	

Other Soils included are:	

Site Description Approval:

Author	Date	Approval	Date
Don Sylvester	09/01/78	Don Sylvester	09/01/78

Site Description Revision:

Author	Date	Approval	Date
Elizabeth Wright	09/18/02	George Chavez	2/12/03